

In addition to these Mexican studies a new genus of Commelinaceæ, *Treleasea*, is established with three species, to include certain Texan and Mexican forms heretofore referred to *Tradescantia*; and three new species of *Tradescantia* from the United States are described. A new genus of Umbellifereæ from Mt. Ranier, Washington, *Hesperogenia* by name, is described by Coulter and Rose; and Mr. L. F. Henderson describes a new *Aster* and a new *Angelica* from Idaho.

The part devoted to a description of the useful plants of Mexico is based upon the personal observations of Dr. Rose during a visit of four months in the summer of 1897. It is full of interesting information and photographic illustrations, and is very suggestive of lines of economic investigation.—J. M. C.

NOTES FOR STUDENTS

M. J. GOLDBERG's experiments lead him to the conclusion that during the germination of wheat in darkness proteid substances are produced in the embryo in considerable quantity,³ although Godlewski in 1897 thought this to be impossible.⁴—C. R. B.

COPELAND AND KAHLENBERG, by a series of carefully conducted experiments show that the injury to plants from solutions of pure metals (Nageli's oligodynamic effect) is due to the toxicity of the compounds (salts) which the dissolved metals form and not to any peculiar or toxic action of the elemental metal.⁵—C. R. B.

M. W. PALLADINE has determined that alternations of temperature accelerate the respiration of severed tips of etiolated shoots of *Vicia Faba* cultivated in 10 per cent. cane sugar. The increased energy of respiration does not depend on the quantity of active nitrogenous foods, but the real cause is not yet determined.⁶—C. R. B.

DR J. W. HARSHBERGER has observed a distinct thermotropic curvature of leaf blade and petiole in *Rhododendron maximum* L.⁷ In cold the blades are revolute and the petiole arcuate downwards. On bringing a branch into a warm room erection and flattening were complete within five minutes. The curvatures in a reverse direction are slower. Turgor variations are the cause.—C. R. B.

ITEMS OF TAXONOMIC INTEREST are as follows: GERRITT S. MILLER (Proc. Biol. Soc. Wash. 13: 79-90. 1899) has discussed the species of *Apocynum*

³ Rev. gen. de Bot. 11: 337-340. 1899.

⁴ Anzeiger Akad. Wiss. Krakau, March 1897, *fide* Goldberg.

⁵ Trans. Wis. Acad. of Sci. 12: 454-474. 1899.

⁶ Revue gen. de Bot. 11: 241-257. 1899.

⁷ Proc. Phila. Acad. Sci. 1899: 219-224. *fig. 3*.

in the District of Columbia, recognizing seven, three of them being described as new, two having been recently described by Professor E. C. Greene, and the remaining two being the well-known species of Linnaeus.—WILLIAM PALMER (Proc. Biol. Soc. Wash. 13: 61-70. 1899) has published a list of the ferns of the Dismal Swamp, Virginia, sixteen in number, one of them being described as a new variety.—J. N. ROSE (11th Ann. Rep. Mo. Bot. Gard. 1-5. 1899) has described a new species of *Agave* and critical notes on other species, accompanied by four plates.—E. P. BICKNELL in his further studies of *Sisyrinchium* (Bull. Torr. Bot. Club 26: 335-349, 445-457, 496-499. 1899) has added eleven new species to the already long list of forms.—AVEN NELSON in continuing his publication of new plants from Wyoming (*ibid.* 350-358, 480-487) describes twenty-three new species, one of which represents a new genus, *Nacrea*, related to *Anaphalis*.—C. L. POLLARD (*ibid.* 365-372) has revised the genus *Achillea* in North America, recognizing ten species, three of which are new.—K. M. WIEGAND (*ibid.* 399-422) presents ten species of *Bidens* found in the United States and Canada, describing one new species and five new varieties.—ANNA M. VAIL in continuing her studies of *Asclepiadaceæ* (*ibid.* 423-431) discusses the types of *Gonolobus* and describes three new species of *Vincetoxicum*.—P. A. RYDBERG (*ibid.* 541-546) has described twelve miscellaneous new species from the western United States.—A. A. HELLER in continuing the publication of his new and interesting plants from western North America (*ibid.* 547-552) describes ten new species, four of which are species of *Mertensia*.—J. M. C.

SOME CURIOUS experiments by A. Pagnoul⁸ on transpiration are reported in the *Experiment Station Record* 11: 118. 1899. They are difficult to explain without more light than the brief summary gives; but to call attention to them we reproduce the abstract. "Experiments are reported in which fescue grass was grown from March 30 to June 21 under almost identical conditions, the only difference being that one pot was filled with a poor clay soil without fertilizer, and the other with a rich calcareous soil to which dried blood and nitrate of potash were added. The same degree of saturation of soil was constantly maintained. The grass was cut May 2, 27, and June 21, weighed and analyzed. The results obtained are tabulated. It appears that during the first period, 33 days, the plants in the poor soil transpired 1190^{gm} of water per gram of dry weight; as compared with a transpiration of 555^{gm} in the rich soil. In the second period the figures were 1053 and 581^{gm} of water per gram of dry weight, and for the last period 1084 and 585^{gm}, respectively. The nitrogen content of the product of each pot was determined, and it was found that for each gram of nitrogen in the product of the poor soil 46^{kg} of water was transpired, while in the rich soil 1^{gm} of nitrogen was found for each kilogram of water given off.

⁸ Bul. Sta. Agron. Pas de Calais 1898: 10-15. fig. 1.